CLAIMS

1. A seal intended for sealing an axis pair (100, 102) in connection with a fluid measurement, whereby the axes (100, 102) rotate in the same direction, the inner one (102) of the axes is inside the outer axis (100) and the phase difference of the axes (100, 102) is arranged to remain within predefined limits, **characterized** in that

the seal (200) is a tubular seal made of an elastic material;

the seal (200) comprises at least two tube sections (202, 204, 400, 402) fixed to each other;

folds (212, 214) of the at least two tube sections (202, 204, 400, 402) have opposing twisting angles;

one end of the seal (200) is fastened to the outer axis (100) and the other end is fastened to the inner axis (102); and

the seal (200) is arranged to twist by a torque proportional to the phase difference between the axes (100, 102).

2. A seal as claimed in claim 1, **characterized** in that at least one tube section (400) of the seal (200) is inside at least one other tube section (402) so that the tube section (400) which is inside and the end (404) of which forms one end of the seal can be fastened to the inner axis (102) and the other end (406) of the seal can be fastened to the outer axis (100).

3. A seal as claimed in claim 1, **characterized** in that the tube sections (202, 204) of the seal (200) are in successive order, whereby each tube section (202, 204) increases the length of the seal (200) by its own length.

4. A seal as claimed in claim 1, **characterized** in that the materials of the at least two tube sections (202, 204, 400, 402) differ from each other.

5. A seal as claimed in claim 1, **characterized** in that the wall thicknesses of the at least two tube sections (202, 204, 400, 402) differ from each other.

6. A seal as claimed in claim 1, **characterized** in that the lengths of the at least two tube sections (202, 204, 400, 402) differ from each other.

7. A seal as claimed in claim 1, **characterized** in that the heights of the folds (212, 214) of the at least two tube sections (202, 204, 400, 402) differ from each other.

8. A seal as claimed in claim 1, **characterized** in that the numbers of folds (212, 214) of the at least two tube sections (202, 204, 400, 402) differ from each other.

9. A measuring device comprising an axis pair (100, 102) rotating in the same direction, the inner axis (102) being inside the outer axis (100);

the measuring device comprises a seal intended for sealing the axis pair;

the measuring device is arranged to determine a property of a fluid to be measured when the fluid causes a phase difference between the axes (100, 102) by the torque it has produced, **characterized** in that

the seal (200) is a tubular seal made of an elastic material;

the seal (200) comprises at least two tube sections (202, 204, 400, 402) fixed to each other;

folds (212, 214) of the at least two tube sections (202, 204, 400, 402) have opposing twisting angles;

one end of the seal (200) is fastened to the outer axis (100) and the other end is fastened to the inner axis (102); and

the seal (200) is arranged to twist by a torque proportional to the phase difference between the axes (100, 102).

10. A measuring device as claimed in claim 9, **characterized** in that the measuring device is arranged to determine the torque of the seal (200) on the basis of the phase difference between the axes (100, 102) as a linear function;

the measuring device is arranged to determine the fluid property on the basis of the torque of the seal (200).

11. A measuring device as claimed in claim 9, **characterized** in that at least one tube section (400) of the seal (200) is inside at least one other tube section (402) so that the tube section (400) which is inside and the end (404) of which forms one end of the seal (200) is fastened to the inner axis (102) and the other end (406) of the seal (200) is fastened to the outer axis (100).

12. A measuring device as claimed in claim 9, **characterized** in that the ends (404, 406) of the seal (200) are arranged so that they do not twist with respect to each other.

13. A measuring method, wherein a property of a fluid is measured on the basis of a phase difference between two axes (100, 102) within each other and rotating in the same direction, the phase difference being produced by the torque between the axes (100, 102) the fluid has caused, **characterized** by

producing (500) by means of a seal (200), which is a tubular seal made of an elastic material and comprising at least two tube sections (202, 204, 400, 402) fixed to each other, a torque twisting in the opposite direction than the torque caused by the fluid between the axes (100, 102) and being proportional to the phase difference between the axes (100, 102);

each tube section (202, 204, 400, 402) comprises at least one fold (212, 214);

the folds (212, 214) of the at least two tube sections (202, 204, 400, 402) have opposing twisting angles;

one end of the seal (200) is fastened to the outer axis (100) and the other end is fastened to the inner axis (102);

the phase difference between the axes (100, 102) is measured (502); and

the fluid property is determined (504) on the basis of the phase difference.

14. A method as claimed in claim 13, **characterized** by determining the torque of the seal on the basis of the phase difference between the axes (100, 102) by means of a linear function, and determining the fluid property on the basis of the determined torque of the seal (200).

15. A seal manufacturing method, wherein the seal is intended for sealing an axis pair (100, 102) of a measuring device, whereby the axes (100, 102) rotate in the same direction, the inner one (102) of the axes is inside the outer axis (100) and the phase difference of the axes (100, 102) is arranged to remain within predetermined limits, **characterized** by

making (600) a tubular seal (200) of an elastic material;

providing (602) the seal (200) with at least two tube sections (202, 204, 400, 402);

providing (604) each tube section (202, 204, 400, 402) with at least one fold (212, 214), the twisting angle of which differs from the direction of the longitudinal axis of the tubular seal (200);

providing (606) the at least two tube sections (202, 204, 400, 402) with folds (212, 214) having opposing twisting angles to make the torque caused by the twisting of the seal (200) during the measurement proportional to the phase difference between the axes (100, 102);

providing (608) the seal (200) ends with fastening parts (208, 210), by which the seal (200) can be fastened to the axis pairs (100, 102) in such a manner that one end of the seal (200) is fastened to the outer axis (100) and the other end is fastened to the inner axis (102).

16. A method as claimed in claim 15, **characterized** by manufacturing the tube sections (202, 204, 400, 402) separately and fixing the tube sections (202, 204, 400, 402) to each other to form a continuous seal.

17. A method as claimed in claim 15, **characterized** by placing at least one tube section (400) of the seal inside at least one other tube section (402), whereby the tube section (400) which is inside and the end of which forms one end (404) of the seal (200) can be fastened to the inner axis (102) and the other end (406) of the seal can be fastened to the outer axis (100).